

# **Developing a web application to improve communication at a software company.**

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Research methodology for the Dissertation submitted in partial fulfillment of the requirements for the degree *Bsc in Information Technology Hons* at the Vaal Campus of the North-West University

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Date of submission: 2021/05/12

Version: 1.0

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## **LIST OF ABBREVIATIONS**

EU	European Union (Abbreviation)
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## **Chapter 5: Artefact Design**

### **1. Introduction**

The goal of this study is to develop a web application that can be used to enhance communication between developers and management at a South African software development company. As discussed in Chapter 2, this study follows the Vijay Vaishnavi (2004) process model, this chapter will focus on the "Development" phase. This chapter is the end of the initial section of the process model and the beginning of production.

### **2. Problem description and background**

In the corporate world, businesses rely on effective communication to succeed. Developers use their screens to communicate and to develop, it often happens that developers lack the number of screens that they need to keep all their important tabs open. This makes it harder for important messages to reach developers and influences productivity and creativity (Schrader, 2018).

As a solution, an artefact has to be developed to assist with the effectiveness of communication in the industry.

### **3. Aims and objectives of project**

This study proposes the development of a communication web application that can easily be viewed in an office by all employees to allow easy access to important communication regarding specific software development projects. Where the primary objective is to develop a web application for a South African software development company that allows for easy access to important communication relating to specific project.

This chapter will discuss the feedback that was obtained by the interview discussed in Chapter 4.

## 4. The Artefact Design

### 4.1. Summary of feedback

The design of the artefact has to satisfy the requirements as set out in Chapter 4, the suggestion phase. Along with the requirements and specifications, the artefact also followed the human-computer interaction rules to provide the best user experience as discussed in Chapter 3 of this study.

The conclusion was that the artefact should improve both communication and productivity in the company. To achieve this the artefact should not only focus on communication between employees, but also communicate the information about the project. The artefact should create a more relaxed environment in the company, while making it easier for the users to interact with the communication aspect that is required in the industry.

Table 4.1. below shows the requirements or specifications and how it will be solved with the use of the built artefact.

1. Table 4.1: Most important requirements and specifications

Most important requirements and specifications		
#	Requirement or specification	How it is solved in the artefact
1.	Improve communication.	Combine different methods of communication as discussed in Chapter 2 of this study. For the Artefact the focus was on instant messages and Issue queues.
2.	Improved productivity.	For a project overview, a user will be able to see feedback on if the other users in their team are busy or not. The artefact also provided clear instructions and users know exactly what is expected from them.

3.	Artefact should focus on communication between employees and communication about the project.	Not only can users communicate with each other, but they can also get the necessary information about their project.
4.	Create a relaxed environment.	The artefact allows for automatic data capture. A calendar system was also added to allow users to organize their activities better.
5.	The user experience comes first.	By using pre-emptive dialog, users will make minimal errors when working with the artefact. Other features can be added if a user desires such a feature.

#### ***4.2. Artefact design***

The design of the artefact is based on the most important requirements and specifications shown in Table 4.1. The next section of the study will visually explain the design of the artefact with the use of screenshots.



### 4.2.1. Improve communication

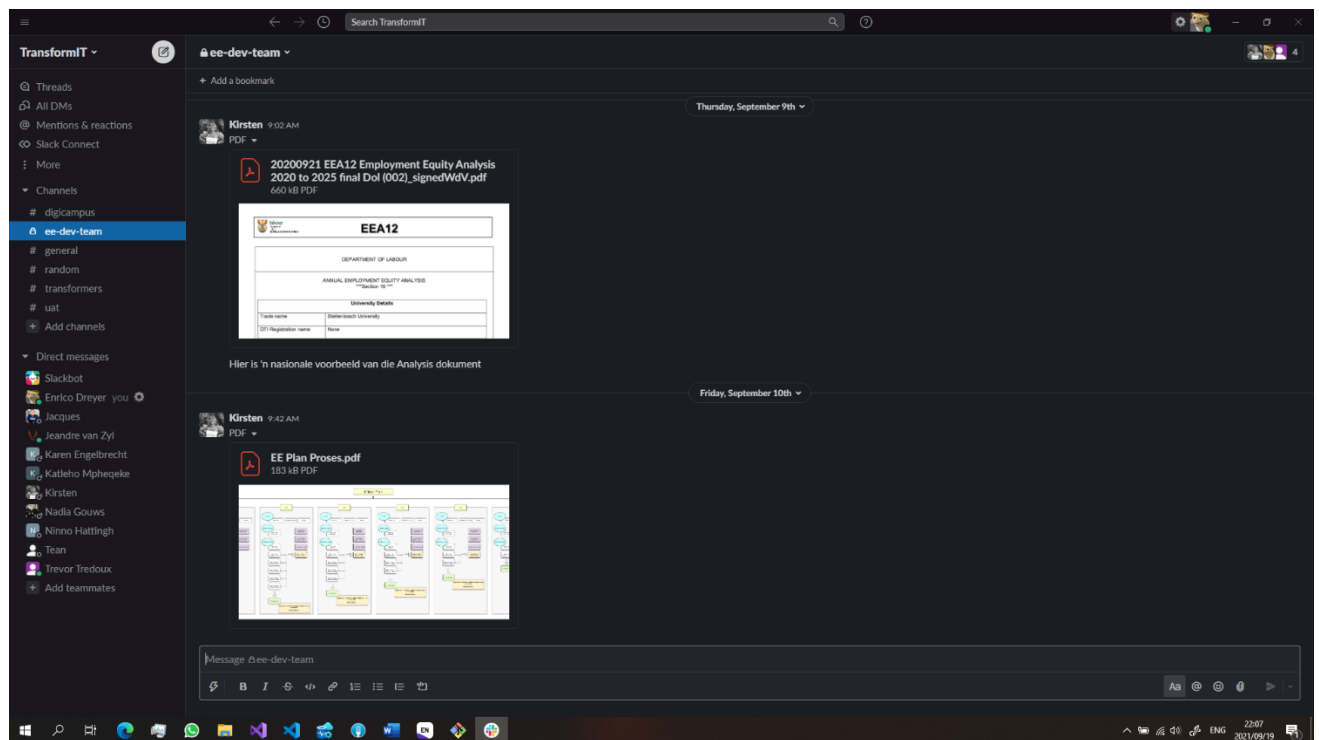


Figure 1: Instant messages

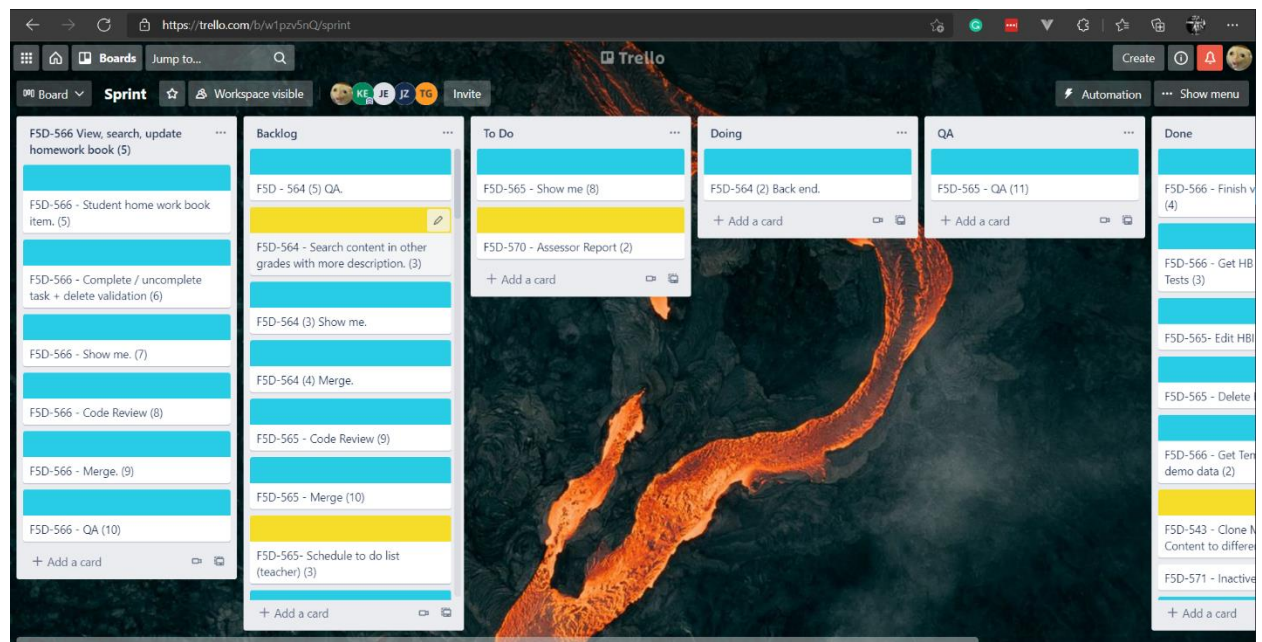













Figure 2: Issue queues

The two ways that the artefact allows communication between employees is making use of instant messages and issue queues. Instant messages allow the employees to

communicate directly to each other, whereas issue queues focus more on the tasks that they are busy with.

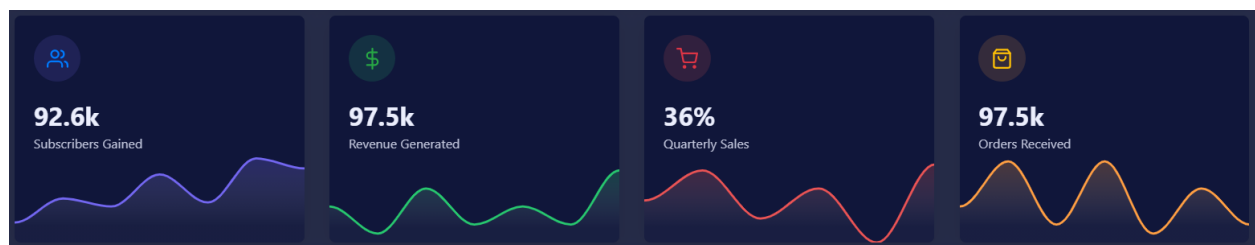
#### 4.2.2. *Improve productivity*

Dispatched Orders						
ORDER NO.	STATUS	OPERATORS	LOCATION	DISTANCE	START DATE	EST DELIVERY DATE
#879985	Moving	  	Anniston, Alabama	130 km	26/07/2018	28/07/2018
#156897	Pending	 	Cordova, Alaska	234 km	26/07/2018	28/07/2018
#568975	Moving	   	Florence, Alabama	168 km	26/07/2018	28/07/2018
#245689	Canceled	 	Clifton, Arizona	125 km	26/07/2018	28/07/2018

**Figure 3: Team detail**

Figure 3 displays information on the whole team and what they are busy with. As a team you work together to reach a common goal, by sharing the information on what each team member is busy with allows for easier sharing of the workload, thus reducing the pressure of each individual (Wehbe, 2017).

#### 4.2.3. *Focus on both communication between employees but also about project*



**Figure 4: Project statistics**

**List View**    Data List » List View

Actions ▾    + Add New    1 - 4 of 100    🔍

<input type="checkbox"/>	NAME	CATEGORY	POPULARITY	ORDER STATUS	PRICE	ACTION
<input type="checkbox"/>	Fitbit - Activity Tracker	Fitness	<div></div>	Delivered	\$99.99	
<input type="checkbox"/>	Fitbit - Flex Wireless Activity	Fitness	<div></div>	Pending	\$99.99	
<input type="checkbox"/>	Fitbit - Sleep Tracker Wristband	Fitness	<div></div>	Delivered	\$99.99	
<input type="checkbox"/>	Fitbit - Sleep Wristband	Fitness	<div></div>	On Hold	\$99.99	

< 1 2 3 4 ... 22 23 24 25 >

**Figure 5: Project Detail**

Figure 4 shows project statistics while Figure 5 shows detail on the project that the team is busy with. Seeing statistics of a project improves in project planning, as well as assist in making changes to the companies strategies and policies (Analytica, 2020).

#### 4.2.4. *Create relaxed environment*

+ Add    Month    Week    Year    < Sep 2021 >

● Business ● Work ● Personal ● None

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16 My Event	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2

**Figure 6: Calendar**

Figure 6 shows the users calendar where they can add or edit events. According to Hill (2021) a calendar assists in giving a bigger picture on what has to be achieved. Users

can plan out their sprints and add events such as meetings that they need to attend. This benefits in terms of setting out time to think and plan for the week ahead, thus creating a more relaxed environment.

#### 4.2.5. *User Experience comes first*



**Figure 7: Guidelines for the user**

Figure 7 shows dialog from the artefact, this allows for ease of use of the artefact. This requirement flows together with the human-computer interaction as user experience is important as it fulfils part of the user's needs (Gangadharan, 2019). This includes all 10 rules as discussed in Chapter 3 of this study.

## 5. Conclusion

The focus of this chapter was the development phase of the Vijay Vaishnavi (2004) process model. Along with the requirements and specifications gathered from the interview as discussed in Chapter 4, the development of the artefact made use of the human-computer interaction rules as discussed in Chapter 3. This chapter also included screenshot of the artefact to explain how the artefact solved the requirements and specifications.

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